

## Reducing Tree Damage in Future Storms

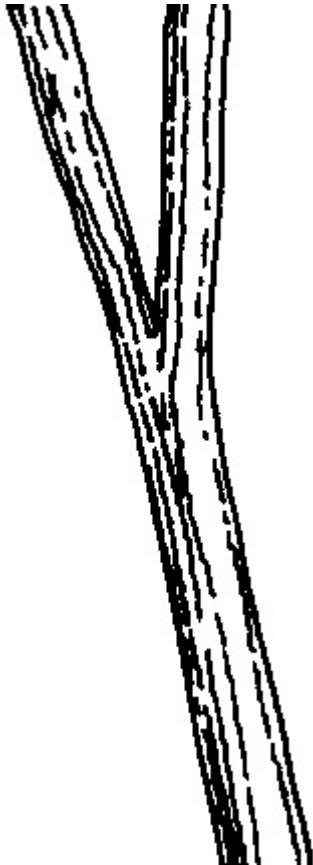
When a major storm strikes, some trees seem to be able to come through with only minor damage, while others suffer the loss of large limbs or sizable parts of their branching structure. In the worst cases, trees may be completely split in two or may have nothing left standing but a trunk.

If a tree has been weakened by disease, there may be little that can be done to prevent major breakage or loss when the stresses of a storm occur. However, there are preventive measures that home and property owners can take to help their trees be stronger and more resistant to storm damage.

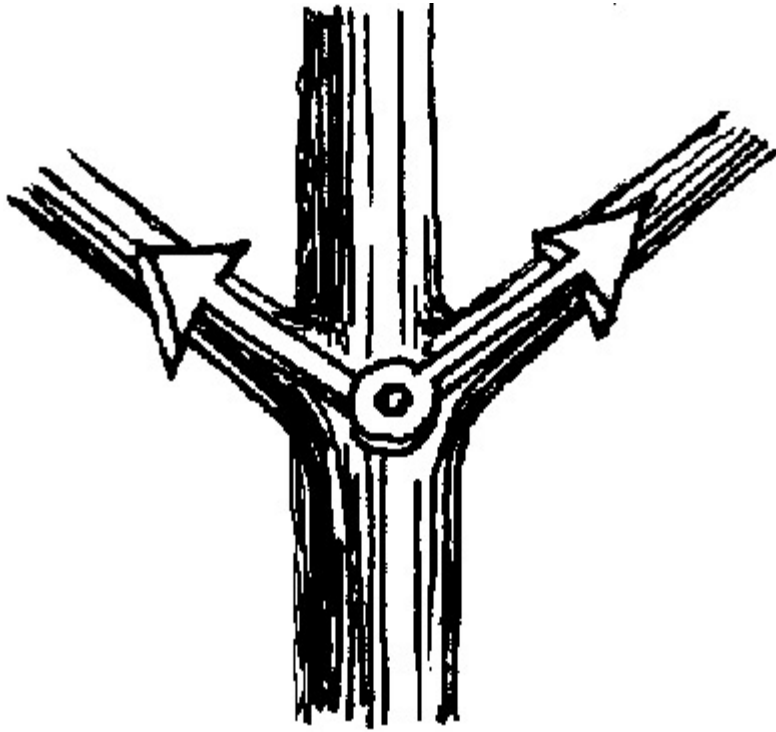
**The National Arbor Day Foundation offers these five suggestions for pruning a tree that will promote the growth of strong branches:**

*1. Encourage good branch angles.*

For most deciduous (broadleaf) trees, narrow angles between branches signal a point of future weakness, whether in the trunk or in the crown of the tree. This happens because as two branches grow closely together, neither has sufficient space to add the wood needed for strength. Instead, they grow against each other, creating a weak joint. The effect is similar to hammering in a wedge between them. To prevent this, remove one of the two branches when the tree is young.



For best branch strength, the ideal branching angle in many broadleaf tree species approximates 10 o'clock or 2 o'clock. Branches at those angles should be encouraged by removing competing but less desirable neighbors.

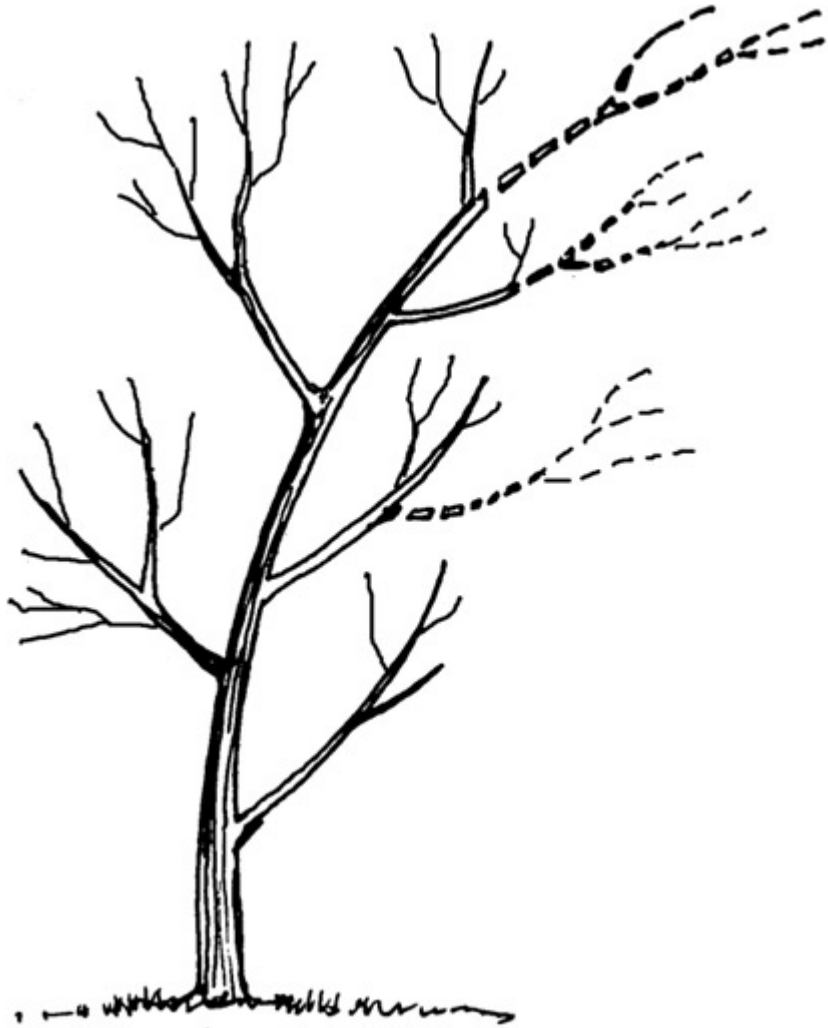


*2. Encourage strong branch/trunk size relationships.*

The relative size of lateral (side) branches is also important in determining branch strength. Ideally, lateral branches should be no more than  $\frac{1}{2}$  to  $\frac{3}{4}$  the diameter of the trunk. Branches larger than that are often heavier than the trunk can support, and are candidates to break when wind, ice, or snow come along. Trees grow by adding new layers of wood on the trunk and branches each year. As the trunk grows, it will strengthen the joints with branches by adding wood around it, like a dowel in a chair leg.

### 3. *Maintain a stable center of gravity.*

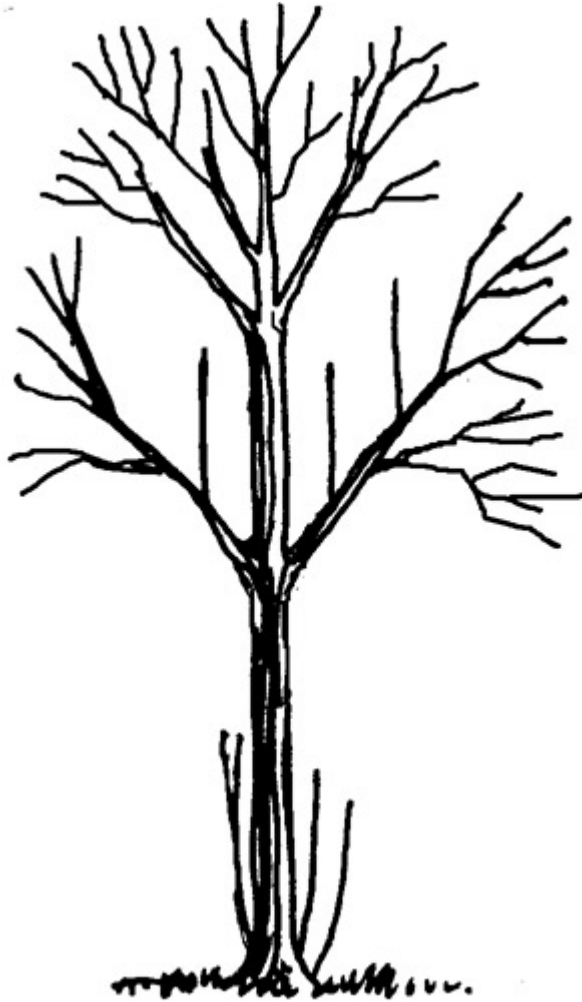
Wind, winter snow loads, or previous loss of a major limb can create situations where the tree's center of gravity is not positioned over the trunk. Then when a severe storm hits, a slight bit of extra weight or wind pressure can break limbs, snap the trunk off, or even topple the tree, roots and all. You can help reposition a tree's center of gravity by selectively removing branches on the leaning side and encouraging branches on the opposite side.



*4. Remove rubbing branches, suckers, watersprouts, and temporary branches.*

Branches that rub against each other produce wounds and decay. One of the offending branches should be removed.

Watersprouts and suckers can occur at the base of the tree or inside the crown. They are rapidly growing, weakly attached, and upright branches that do not follow the tree's normal growth pattern. On trees that have been severely damaged, these kinds of branches may be temporarily needed to provide foliage. In healthy trees, however, they most often use more energy than they return to the tree, and it is best to remove them as soon as possible.



Temporary branches grow low on the tree when it is young and protect young bark from injury by the sun. After a tree is three to four years old, these temporary branches should be gradually removed.

Because leaves are vital in providing the tree with nourishment, never remove more than one-third of a tree's leafy crown when pruning.

*5. Don't cut branches back to stubs.*

Often people have the mistaken idea that long natural limbs on a tree will break more easily in a storm, and should be cut back to make them stronger. Just the opposite is the case. When a branch is cut back to a stub, new branches will grow from the edges of the stub. Because they cannot form a strong union with the stubbed branch, these new branches are even more likely to be broken in a future storm.

If a branch needs to be removed, cut it back to a main branch or to the tree's trunk. Never leave a stub.

